Caledonides

Scandinavian Caledonides. By T. Strand and O. Kulling. Pp. x+302. (Wiley: London and New York, April 1972.) £18.75.

THIS long awaited book is not a single or coordinated account of the Scandinavian Caledonides but two more or less completely separate ones for Norway and Sweden. Both are rather old, having been mostly written some seven years ago. The book contains no single map on any scale of the whole Scandinavian Caledonides. The Norwegian section which contains no single map of Norway of any kind directs attention to the one to one million map of Norway (approximately £2 more). The Swedish section contains an outline map of the Caledonian geology of Sweden at a scale of some one to three million but does not fix the map relative to the geographies of either Sweden or Norway. No reference is made to the one to one million map of Sweden, although direct reference is made to the accompanying description. Regional maps are few and the use of tables to organize data and allow easy comparison too infrequent. Kulling's Swedish Caledonian has more the flavour of a research monograph than Strand's for Norway. This is natural because the Swedish Caledonides samples only the eastern part of the mountain system while Strand has to cope with all aspects. Because of the difference, however, and possibly because of the number of geologists working on the Norwegian side in the past decade, Strand's account looks more dated than Kulling's. Both sections of the book lack definition or discussion of the large scale problems the chain offers: perhaps this is editorial policy. While the book has considerable value to anyone interested in the Scandinavian Caledonides, such obvious deficiencies in a member of a series directed at an international audience and above all so magnificently begun by Gansser's book on the Himalayas must be regretted.

R. NICHOLSON

Cold Mutton

Atlas of Protein Spectra in the Ultraviolet and Visible Regions. Edited by Donald M. Kirschenbaum. Pp. xii+290. (Adam Hilger: London; Plenum Press: New York; 1972.) £10.60.

IT is difficult to be kind about this book. In the 1972 Misconceived Enterprise Stakes (which could be run each year for the benefit of scientific publishers, a number of whom would regularly provide strong contenders) it should be a firm favourite. Most people with experience in ultraviolet and visible spectrophotometry have learnt, often to their cost, that even on one identical sample a spectrum from one laboratory is not going to look the same as the spectrum from another unless very careful control of procedure is maintained. For this reason unselective collections of spectra (like this book) taken from the literature are practically valueless. It might almost be said that the value of any collection of spectra varies inversely with the number of contributors; certainly the useful collections are all of spectra measured under controlled conditions (in intention at least) by a limited number of contributors, and most of these would have been better with fewer contributors and hence greater control. The field of protein spectroscopy is, too, a quite peculiarly hopeless one in which to jettison one's critical faculties, and it seems that, from the attempt made to disarm criticism in the preface, the editor knows this perfectly well.

This may seem a negatively purist attitude; for if, as the editor claims, all the relevant data published in the original paper had been included with each spectrum, it would then have been possible, for the experienced reader at least, to make a personal assessment of its value. But unfortunately in the protein field the relevant data must include much, for example, the preparation and purification of the sample, which is only available (if it is available at all) by reference to the original. There is therefore no basis for making, as the editor suggests, comparisons of subtle differences between the spectra of uncomplexed proteins which occupy much of this book. It would have been more useful, and much cheaper, simply to have listed ϵ (1 per cent, 1 cm) values with each of these references, and since in many cases there are no data to calculate this essential parameter the saving in space would be greater still.

So we have a decidedly expensive bibliography of papers on protein work which include spectrophotometric data. Nearly half of the 534 references are for 1966–9, but they go back to 1925, with 32 of them pre-1939. They are listed in alphabetical order of protein names, with a general index, a sources index, and an index of miscellaneous phenomena (effects of *p*H, irradiation and so on). An index listing proteins according to their prosthetic groups or metal content would have been at least equally useful, because it would then be possible to compare the spectra of, for example, the flavo-proteins, or the copper-containing proteins. It is sad to see the distinguished name of Adam Hilger on a book such as this.

E. A. JOHNSON

Membraneosophy

Membrane Structure. By D. Branton and D. W. Deamer. Pp. 70+24 figures. (Springer-Verlag: Vienna and New York, 1972.) US $13.10.

So much work is being done on natural membranes, with some progress, that reviewing it seems attractive. (Indeed, one wonders if a shortage of research funds might be accommodated by half the scientific community reviewing work done by the other half. One could draw lots for three-year stints in the lab. or else in the library.) A review on membrane structure has recently been published in the series of monographs with the 18-letter title *Protoplasmatologia.* The series began as a handbook for cell biology; but having reached 9,400 pages, the publishers abandoned this format.

Having set their sights on finding the structures underlying fascinating membrane functions, Branton and Deamer begin with a necessarily short review of present knowledge and then consider in turn protein-lipid-protein (PLP), lipid-protein-lipid (LPL) and particulate models. There is a section on differentiation and specialization, and the authors conclude with a summing up for a modified PLP model since it alone "can reasonably account for the X-ray diffraction results with a variety of membranes, as well as detailed profiles of myelin", and since the model is supported by electron microscopy.

In attempting to amend the PLP model, the authors consider examples of protein hydrophobically bound to a lipid bilayer "without requiring the entire protein molecule to be located within the structure of the membrane". One of these is a structure in which "some of the membrane phospholipids would have one fatty acid chain extended into the membrane interior and the other fatty chain extended towards the membrane surface, where it would interact with hydrophobic binding sites of the surface protein". Broadening the Danielli-Davson proposal of 1935 to this extent is found to be necessary because the PLP concept has some obvious weaknesses.

The book summarizes a broad range of studies: electron microscopy, X-ray diffraction, thermal analysis, electron spin resonance, infrared, optical rotary dispersion, circular dichroism, nuclear magnetic resonance and enzymic hydrolysis of lipids. Because of the volume of work done, it is a difficult field in which to publish a timely and accurate review. Hence one can excuse the unaccountable statement that "there is certainly no good evidence for the strong lipid-protein interactions envisaged by both the PLP and the subunit models": PLP may be a misprint for LPL.

A. E. BLAUROCK